United States Department of Agriculture

Marketing and Regulatory Program

Animal and Plant Health Inspection Service

Medfly Cooperative Eradication Program, Central Florida

Environmental Assessment, April 1998

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A. Introduction

The Mediterranean fruit fly or Medfly, *Ceratitis capitata* (Wiedemann) is a major pest of agriculture throughout many parts of the world. Because of its wide host range (over 250 species of fruits and vegetables) and its potential for damage, the Medfly represents a serious threat to U.S. agriculture. Although it has been introduced intermittently to the U.S. mainland several times since its first introduction in 1929, eradication programs have been implemented to prevent it from becoming a permanent pest on the U.S. mainland.

A permanent infestation of Medfly would be disastrous to agricultural production in Florida and the United States. Although established on the Hawaiian islands, Medfly's unchecked presence on the U.S. mainland would result in widespread destruction of crops such as apricot, avocado, grapefruit, nectarine, orange, peach, and cherry. Commercial crops as well as home production of host fruits would suffer if Medfly were allowed to remain. Fruit that has been attacked by Medfly is unfit to eat because the Medfly larvae tunnel through the fleshy part of the fruit, damaging the fruit and subjecting it to decay from bacteria and fungi.

In May 1997, an adult Medfly was found in a fruit fly trap in Tampa, Florida (Hillsborough County). Subsequently, in June 1997, Medflies were found in additional counties of Central Florida (Manatee and Polk Counties.) An environmental assessment (EA) was prepared for the May program and slightly revised because of the expansion in June 1997. That program was concluded, but on April 28, 1998, an adult Medfly was found in a trap near Umatilla (Lake County), Florida. Subsequent to that find, additional adults and larvae were found in nearby areas of Lake County, confirming that an infestation exists. Delimitation trapping is continuing to determine the size and boundaries of the infestation. The infestation is presently found in abandoned groves in rural areas of Lake County, although that situation may change in the future and the area could expand.

B. Purpose and Need

The Medfly infestation detected in central Florida represents a major threat to the agriculture and environment of Florida and other U.S. mainland States. The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) and the Florida Department of Agriculture and Consumer Services (FDACS) are proposing a cooperative program to eradicate the Medfly infestation and eliminate that threat.
APHIS' authority for cooperation in the program is based upon the Organic Act (7 United States Code (U.S.C.) 147a), which authorizes the Secretary of

Agriculture to carry out operations to eradicate insect pests, and the Federal Plant Pest Act (7 U.S.C. 150dd), which authorizes the Secretary of Agriculture to use emergency measures to prevent the dissemination of plant pests new to or not widely distributed throughout the United States.

This EA is a revision of the 1997 Central Florida EA, to accommodate new areas found to be infested in 1998. It analyzes the environmental consequences of alternatives which have been considered for Medfly control and considers, from a site-specific perspective, environmental issues that are relevant to this particular program. This EA also shall apply to additional areas of Central Florida which may be added to the program, provided that the environmental conditions, control strategies, and risk reduction strategies remain substantially the same. Alternatives for Medfly control have been discussed and analyzed comprehensively within the "Medfly Cooperative Eradication Program Final Environmental Impact Statement—1993" (EIS), which is incorporated by reference and summarized within this environmental assessment. The potential enviromental impacts from the use of Suredye in control of fruit flies have been analyzed comprehensively by APHIS in two risk assessments in 1995. Those documents are also incorporated by reference and summarized within this environmental assessment.

In view of the incompleted status of APHIS' development of its risk reduction strategy for Medfly cooperative eradication programs, this EA includes (appendix A) the risk reduction strategies that were recommended in the draft risk reduction EA. Those strategies will be refined somewhat and additional strategies may be added before the risk reduction EA is made final. At this time, however, the preparers of this EA wished to ensure that at least the draft recommendations were made available to the decision maker for this emergency program.

II. Alternatives

Alternatives considered for this proposed program include (1) no action, (2) Medfly suppression (including chemicals), (3) Medfly suppression (without chemicals), (4) Medfly eradication (including chemicals), and (5) Medfly eradication (without chemicals). APHIS' preferred alternative for the program is Medfly eradication (including chemicals), using an integrated pest management (IPM) approach. For more detailed information on the alternatives for Medfly control and their component methods, refer to the EIS and SureDye risk assessments.

III. Environmental Impacts

The potential environmental impacts of the program's alternatives and component treatment methods have been discussed and analyzed in detail within the EIS and associated analyses (including the "Biological Assessment, Medfly Cooperative Eradication Program—August 1993") and the SureDye risk assessments. In addition, potential cumulative impacts were analyzed within the EIS. Refer to the EIS and the analyses it cites for greater detail. This environmental analysis focuses on site-specific issues and conditions, especially with respect to any effects they might have on potential environmental effects. Issues of concern associated with this proposed action include (1) potential effect on human health from chemical pesticide applications, (2) potential effect on wildlife (including endangered and threatened species) from program activities and treatments, and (3) potential effect on environmental quality.

The area of the proposed program is predominantly rural, but there is good potential for movement of the Medfly to urban and suburban areas. The fly detections are in old, abandoned groves. There are a number of sensitive sites within the eradication zone. The presence of many bodies of water suggests the need for buffers to avoid drift and minimize contamination. Ocala National Forest is just north of the eradication zone. If the treatment zone should expand in the future to include the national forest and nearby suburban areas, appropriate protection measures will be employed to avoid adverse impacts to these areas.

A. Human Health

The principal concerns for human health are related to the program use of chemical pesticides as follows: malathion bait (especially when applied from the air), diazinon (soil drenches), and methyl bromide (a fumigant). Although SureDye bait may be used in some field tests within the eradication zone, the use of the bait and SureDye (registered drug and cosmetic dye) will be very restricted until the safety of use of these substances to humans has been clearly demonstrated. The following three major factors influence the risk associated with pesticide use: fate of the pesticides in the environment, their toxicity to humans, and their exposure to humans. Each of the program pesticides is known to be toxic to human beings. Exposure to program pesticides can vary, depending upon the pesticide and the use pattern, but data from the human health risk assessment prepared for the EIS and the SureDye Risk Assessments indicates that exposures to pesticides from normal program operations are not likely to result in substantial adverse human health effects. Refer to the EIS, its supporting documents, and SureDye risk assessments for more detailed information relative to human health risk.

The alternatives were compared with respect to their potential to affect human health. In general, a well-coordinated eradication program using IPM technologies would result in the least use of chemical pesticides overall and the least potential to adversely affect human health. The no action alternative, both suppression alternatives, and the Medfly eradication (no chemicals) alternative, all would be expected to result in broader and more widespread use of pesticides by homeowners and commercial growers, with correspondingly greater potential for adverse impact.

Consistent with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," APHIS considered the potential for disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. In general, the population of this area is diverse and lacks any special characteristics that differ from those described in the EIS. There may exist, however, areas where many residents are predominantly Spanish-speaking. Pertinent documents (environmental documents, precautions, and/or warnings) will be translated into Spanish for dissemination in these areas, and application schedules will be provided to radio stations and other media in Spanish. There is no evidence that any one population is likely to have disproportionate effects from these program activities. APHIS also recognizes that a proportion of the population may have unusual sensitivity to certain chemicals or environmental pollutants and that program treatments pose higher dangers for these individuals. Special notification procedures and precautions, as stated in the EIS's recommended mitigations, are required and serve to minimize the risk for this group.

B. Nontarget Species

The principal concerns for nontarget species (including endangered and threatened species) also involve the use of program pesticides. Paralleling human health risk, the risk to nontarget species is related to the fate of the pesticides in the environment, their toxicity to the nontarget species, and their exposure to nontarget species. All of the pesticides are highly toxic to invertebrates, although the likelihood of exposure (and thus impact) varies a great deal from pesticide to pesticide, and with the use pattern and route of exposure. For example, SureDye bait spray must be ingested by the invertebrate species to cause any toxic effects, and most species are neither attracted to the bait mixture nor stimulated to feed upon the ingredients. This ensures that Suredye will not adversely affect most invertebrates. Refer to the EIS, its supporting nontarget risk assessment, and the SureDye risk assessments for more information on risks to all classes of nontarget species.

APHIS has consulted with the U.S. Department of the Interior, Fish and Wildlife Service (FWS), under the provisions of section 7 of the Endangered Species Act of 1973, for the Medfly Cooperative Eradication Program (the national program.) APHIS has prepared a biological assessment for the Medfly Cooperative Eradication Program and FWS has concurred with APHIS' no effect determination, predicated on APHIS' adherence to specific protective measures. APHIS is currently conducting an emergency consultation with the FWS, with regard to the protection of endangered and threatened species or their habitats within the program area. Based upon FWS' original concurrence of no effect and the continuing consultation, no adverse impacts to endangered or threatened species, or their habitats, are foreseen.

The alternatives were compared with respect to their potential to affect nontarget species. Paralleling the findings for human health, we have determined that a well-coordinated eradication program using IPM technologies would result in the least use of chemical pesticides overall with minimal adverse impact to nontarget species. The no action alternative, both suppression alternatives, and the Medfly eradication (no chemicals) alternative, all would be expected to result in broader and more widespread use of pesticides by homeowners and commercial growers, with correspondingly greater potential for adverse impact.

The area was considered with respect to any special characteristics that would tend to influence the effects of program operations. Potentially sensitive areas have been identified, considered, and accommodated through special selection of control methods and use of specific mitigative measures. The area contained no special characteristics that would require a departure from the standard operating procedures and mitigative measures that were described in the EIS.

C. Environmental Quality

The concerns over environmental quality include concerns for the preservation of clean air, pure water, and a pollution-free environment. Program pesticides remain the major concern of the public and the program in relation to preserving environmental quality. Although program pesticide use is limited, especially in comparison to other agricultural pesticide use, the proposed action would result in release of chemicals into the environment. The fate of those chemicals varies with respect to the environmental component (air, water, or other substrate) and its characteristics (temperature, pH, dilution, etc.). The half-life of malathion in soil or on foliage ranges from 1 to 6 days, and in water from 6 to 18 days. The half-life of phloxine B/uranine (SureDye) in soil is 4 days, on foliage is 2 days, and in water ranges from 1 to 3 days. The half-life of diazinon in soil ranges from 1.5 to 10 weeks, and in water at neutral pH from 8 to 9 days. Methyl bromide's half-life is 3 to 7 days, but the small quantities used disperse when fumigation chambers are vented. Refer to the EIS and SureDye risk assessments for more detailed considerations of the pesticides' environmental fates.

The alternatives were compared with respect to their potential to affect environmental quality. Again, a well-coordinated eradication program using IPM technologies would result in the least use of chemical pesticides overall with minimal adverse impact on environmental quality. The no action alternative, both suppression alternatives, and the Medfly eradication (no chemicals) alternative, all would be expected to result in broader and more widespread use of pesticides by homeowners and commercial growers, with correspondingly greater potential for adverse impact.

The proposed program area was examined to identify characteristics that would tend to influence the effects of program operations. Allowances were made for the special site-specific characteristics that would require a departure from the standard operating procedures. The approaches used to mitigate for adverse impacts to bodies of water are described in the EIS.

In conclusion, the majority of the risk in the program is associated with pesticide use. Pesticide exposure and subsequent risk to humans and nontarget species is not expected to be substantial in this program because of the localized nature of the infestation, the limited use of pesticides, the precise targeting of pesticides, and the safety procedures employed. Although minimal exposure could pose higher risk to some sensitive individuals and some nontarget organisms, pesticide exposure is generally expected to be minimal and program standard operating procedures and mitigations (especially notifications) serve to minimize that risk. Risk to environmental quality is considered minimal. No significant cumulative impacts are expected as a consequence of the proposed program or its component treatment methods.

IV. Listing of Agencies and Persons Consulted

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Appendix A. - Recommended Risk Reduction Strategies

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The following recommended risk reduction strategies were identified in APHIS' "Draft Risk Reduction Strategy, Florida Medfly Program, Environmental Assessment, February 1998." Although the process associated with that EA has not been completed and APHIS has not issued a determination on its final risk reduction policy, those component strategies recommended in the draft EA are concisely summarized herein for consideration by APHIS' Medfly program decision maker. To the extent these strategies are available (from budgetary, efficacy, and legal perspectives), they are recommended for the Central Florida Medfly Eradication Program.

1. Exclusion Strategy

Recommendations:

- Purchase and deploy X-ray equipment to check baggage at high-risk Florida ports of entry.
- Establish and maintain canine teams at high-risk Florida ports of entry.
- Develop and maintain computer technology for tracking illegal importations.
- Increase inspection on low-risk flights (e.g., Canadian flights that could include transshipped host material.)
- Develop an intensive Caribbean Basin initiative to improve plant protection technologies there, thereby lowering the risk of exotic fruit fly importations from them.
- Obtain legislative priority on introduction and passage of Consolidated Statutes to clarify and strengthen APHIS authorities.
- Explore cooperative funding with industry for Medfly exclusion efforts.
- Complete a pathway study to identify the most likely avenue of introduction for Medfly and commit resources and improve the technology to block those pathways.

2. Detection and Prevention Strategy

a. Strengthened Detection Trapping Program

Recommendations:

- Implement a cooperative/co-managed detection program for Medfly and other pests that provides an appropriate level of protection.
- Ensure that NEFFTP guidelines are followed, in that the appropriate number of traps are placed and inspected, and that the trapping program is managed properly.

b. Strengthened Delimitation Trapping Program

Recommendations:

- Cooperatively establish and maintain resources for a permanent infrastructure to implement a biologically sound delimitation trapping program.
- Explore use of male annihilation, mass trapping, "elotes", or other control technologies that can be implemented along with delimitation trapping.

3. Control Strategy

a. Sterile Release (SIT) Program

Recommendations:

- Develop and approve a broad, prophylactic SIT program for Florida.
- Increase Medfly production for prophylactic and emergency response activities.
- Explore and secure new sources of funding for prophylactic programs.

b. Use of Malathion as a Last Resort

Recommendations:

- Use aerially-applied malathion only as a last resort in emergency eradication programs.
- Re-evaluate the uses of malathion (aerial and ground), if malathion is designated as a carcinogen.
- Accelerate research into replacement emergency eradication tools for Medfly.

c. Use of SureDye as an Alternative to Malathion

Recommendations:

- Support and secure pesticide registration for use of SureDye bait against Medfly.
- Develop uses of SureDye bait and evaluate its potential as a substitute for malathion bait.
- Restrict use of SureDye bait, where possible, to ground applications, so as to minimize property damage.

4. Communi-cation Strategy

Recommendations:

- Provide a complete, comprehensive package detailing communications policies to the public.
- Describe how members of the public may obtain information pertaining to program risks.
- Describe actions that will take place upon the implementation of an eradication program and the implementation of pesticide applications.
- Describe notification procedures and explain how chemically sensitive members of the public may avail themselves of direct notification.
- Describe established procedures for receiving and resolving complaints.

Finding of No Significant Impact
for
Medfly Cooperative Eradication Program,
Central Florida,
Environmental Assessment, April 1998

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS) has prepared a revised environmental assessment (EA) that analyzes alternatives for control of the Mediterranean fruit fly (Medfly), an exotic agricultural pest that has been found in Central Florida. The EA, incorporated by reference in this document, is available from:

USDA, APHIS, PPQ
Tampa Work Unit
4951-B East Adamo Drive, Suite 220
Tampa, FL 33605

or

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4700 River Road, Unit 134
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The EA for this program analyzed alternatives of (1) no action, (2) Medfly suppression (including chemicals), (3) Medfly suppression (without chemicals), (4) Medfly eradication (including chemicals), and (5) Medfly eradication (without chemicals). Each of those alternatives was determined to have potential environmental consequences. APHIS selected Medfly eradication (including chemicals), using an integrated pest management (IPM) approach for the proposed program because of its capability to achieve eradication in a way that also reduces the magnitude of those potential environmental consequences.

APHIS has prepared a programmatic biological assessment for endangered and threatened species and is currently conducting an emergency consultation with the U.S. Department of the Interior, Fish and Wildlife Service (FWS), with regard to the protection of endangered and threatened species or their habitats. APHIS will adhere to protective measures designed specifically for this program and mutually agreed upon with FWS.

I find that implementation of the proposed program will not significantly impact the quality of the human environment. I have considered and based my finding of no significant impact on the quantitative and qualitative risk assessments of the proposed pesticides and on my review of the program's operational characteristics. In addition, I find that the environmental process undertaken for this program is entirely consistent with the principles of "environmental justice," as expressed in Executive Order No. 12898. Lastly, because I have not found evidence of significant environmental impact associated with this proposed program, I further find that an environmental impact statement does not need to be prepared and that the program may proceed.

/s/
Michael J. Shannon
State Plant Health Director

April 30, 1998
Date